# CHAPTER 5
# Management Goals and Environmental Impacts

## Definition of Terms Used in This Plan

*Biological elements* are species, habitats, or communities for which specific management goals have been developed within the plan.

*Public use elements* are any recreational, educational, scientific, or other use activity appropriate to and compatible with the purposes for which this property was acquired.

*Facility maintenance elements* are general-purpose elements describing the maintenance and administrative program, which helps maintain the orderly and beneficial management of the area.

*Biological goals* are statements of intended long-range results of management based upon the feasibility of maintaining, enhancing, or restoring species populations and/or habitat (i.e., these goals provide a statement of desired future conditions on the Reserve).

*Public use* goals are statements of the desired type and level of public use compatible with the biological element goals previously specified in the plan.

*Tasks* are the individual projects or work elements undertaken to implement the goal and are useful in planning operation and maintenance budgets.

## Biological Elements: Goals, Objectives, and Environmental Impacts

### Goals and Objectives

**Element 1.** Northern Basalt Flow Vernal Pools and Cobble and Swale Trains Habitat Types

Goal: To preserve and protect these habitat types on the Reserve.

Objective 1: Appropriately manage the vegetation of NTMER as necessary to maintain the existing conditions.

Task 1. Continue the historic grazing management regimen as described in the cultural features section. This task will require that the actual stocking rate be determined; because there is no fence separating private lands from the NTMER, all of the top of NTM is stocked as a single pasture and it is currently impossible to calculate the stocking rate for the Reserve from the number of cow/calf pairs present without more site-specific information. Periodic surveys to determine how many animals are actually using the Reserve will be required to calculate the actual stocking rate for the Reserve. Because grazing management on the NTMER site has been consistent for 45 years and appears to have contributed to the preservation of Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types, no changes to the grazing management regimen should be instituted without strong evidence that such changes are required to protect sensitive-status species and the Northern Basalt Flow Vernal Pools and the Cobble and Swale Trains habitat types. An example of a change in grazing management would be the fencing of riparian areas in the canyons to protect riparian vegetation. This action would alter the behavior of the cows and might lead to negative impacts to sensitive habitat types or special-status species. Consult with qualified range management specialists with vernal pool expertise who are with the University of California Cooperative Extension Program and the USDA Natural Resources Conservation Service.

Task 2. Establish areas, with feedback from the current range manager, where salt stations may be established with minimal impacts to the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types or to sensitive-status species. The impacts to be minimized include trampling of plants, soil compaction, erosion, and localized salt concentrations in the soil. It is unclear if it is better to establish salt stations in the same locations year after year or to move the salt stations to different locations each year to spread out the impacts. The soil disturbance created by the animals at the salt station will tend to benefit weedy plant species and it may be better to keep the disturbance localized rather than spreading it out over a relatively large area to reduce the number of populations and the size of populations of the weedy species. This is a management issue that warrants further study. At a minimum, the range manager should be consulted about locating salt stations to encourage the cows to remain widely distributed across NTMER, and a spring survey should be conducted during the height of the wildflower season

to identify relatively large upland areas that are dominated by NIS and lack sensitive-status plant species for establishing the locations of potential salt stations. Study, develop, and implement best management practices for the location and duration of salt stations.

Task 3. Consider conducting small grazing exclusion experiments, using portable electric fences to determine how the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitats, individual sensitive-status species, and non-native invasive species will respond to either the reduction or the elimination of grazing. Potential experimental treatments would be no grazing, grazing until January 15 and then no grazing, and historical grazing levels. Areas with high densities of NIS and of critical areas such as vernal pools and rock outcrops should be included in the study.

**Element 2.** Sensitive-Status Species

Goal: To preserve and protect sensitive-status species on the Reserve.

Objective 1: Appropriately manage the NTMER as necessary to maintain existing conditions and conduct surveys for sensitive-status species in areas that have not been previously surveyed.

Task 1. Continue the historic grazing management regimen and consider the studies and experiments suggested under Element 1. Study, develop, and implement best management practices for the location and duration of salt stations.

Task 2. Conduct botanical and wildlife surveys in the canyons and along the sides of the NTMER for sensitive-status plant and animal species. Plant surveys should focus on identifying and surveying outcrops of the Ione Formation and animal surveys should focus on areas with appropriate habitat.

Task 3. Conduct surveys in the canyons and along the sides of the NTMER for NIS that may impact sensitive-status species or the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types. Populations of NIS that may impact either of the target biological elements should be ranked for control based on (1) their current distribution, current population sizes, and anticipated growth rates; (2) their potential impacts to target vegetation, habitat types, and special-status species; (3) the likelihood of successfully eliminating the NIS from the Reserve; and (4) the amount of resources

necessary for a successful eradication or control effort. Populations of NIS that may impact non-target biological elements should be ranked for management, based on the availability of resources and on the four ranking criteria used for target biological elements.

Task 4. Focused NIS surveys should be conducted annually in May to detect any newly introduced NIS species so that they can be controlled before they have a chance to spread. If resources are available, additional surveys throughout the year are advisable. The surveys should be conducted in and around the parking lot and the paths leading from the parking lot, along dirt access roads and Cherokee Road, and in all areas where fire or road crews have operated within the past three years. The ranking criteria described in Task 3 should be used to determine if NIS control action is necessary. One species that should be of concern is barb goatgrass (*Aegilops triuncialis*), which has the ability to establish dense populations in poor and shallow soils and is highly resistant to control by grazing.

Task 5. Conduct surveys in the canyons and along the sides of the NTMER to determine if prescribed burning is necessary for maintaining the existing plant communities or any sensitive-status species identified under Task 2 of this element.

## Environmental Impacts

The continuation of the historical grazing management regime is necessary to preserve and protect the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types and sensitive-status species. NIS such as medusa-head grass produce a deep and persistent thatch layer that eliminates many native species. These NIS species are especially problematic in swales and shallow vernal pools where Butte County meadowfoam, Butte County golden clover, and Red Bluff Dwarf Rush are typically found on the NTMER. Insufficient grazing of medusa-head grass has been cited as the reason for the decline of one population of Butte County meadowfoam (United States Fish and Wildlife Service 2005b). Current research on the Northern Basalt Flow Vernal Pools on Kennedy Table/Big Table Mountain near Fresno indicates that grazing is necessary to preserve this vegetation type (M. McCrary, unpublished data). Additionally, research results from other types of vernal pools clearly indicate that management actions must address NIS and thatch accumulation to preserve the characteristic vegetation of those vernal pools (Griggs 2000, Marty 2005). Prescribed burning is not a viable alternative to grazing for controlling thatch on the NTMER because the many areas of unvegetated or lightly vegetated exposed bedrock, cobble trains, and shallow soils make achieving a uniform burn in the more vegetated areas highly unlikely. Because the range is stocked in the fall, the animals removed by mid-May, and no

supplemental feed supplied, the possibility of the seed of NIS being introduced through grazing operations is negligible. During a site visit in February 2006, there were no discernable significant impacts to woody vegetation in the upper reaches of Beatson Hollow (J. Gerlach, personal observation). Salt stations are an essential part of grazing management and disturbances at salt stations will have no significant negative impact on sensitive habitat or sensitive species if the salt stations are located appropriately. For these reasons, the continuation of the historical grazing management regimen will have no significant negative environmental impacts.

# Public Use Elements: Goals and Environmental Impacts

## Goals and Objectives

**Element 1.** Public Access for Recreation and Environmental Education.

Goal 1: To allow public access to the Reserve for recreation and environmental education that is consistent with its primary goal of protecting and preserving the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types and sensitive-status species.

Objective 1: Provide appropriate access for recreational and educational visitors.

Task 1. Determine the historic and current visitation rates to NTMER during the wildflower season.

Task 2. Monitor and map any significant impacts of visitor use on the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types, sensitive-status species, trails, cultural resources, and infrastructure.

Task 3. If necessary, identify any management or public education measures necessary for reducing visitor impacts and take appropriate action.

Task 4. If visitation rates are increasing, develop policies that will protect sensitive areas.

Goal 2: To develop cooperative agreements with community and volunteer groups to help manage the property.

Goal 3: To develop cooperative/joint management strategies with the Department of Parks and Recreation.

Goal 4: Evaluate the trail design and usage for compatible purposes.

## Environmental Impacts

These actions are generally focused on data acquisition and analysis and will have no significant negative environmental impacts.

# Facility Maintenance Elements: Goals and Environmental Impacts

## Goals and Objectives

**Element 1.** Provide adequate facilities for public access to the extent that the Northern Basalt Flow Vernal Pools and Cobble and Swale Trains habitat types and individual sensitive-status species are not significantly impacted.

Goal: To allow public access to the Reserve for recreation and environmental education that is consistent with its primary goal of protecting and preserving sensitive habitats and species.

Objective 1: Provide facilities to minimize waste impacts.

Task 1. Provide toilet facilities and refuse containers in the parking area that are appropriate for daily visitation rates as they vary through the year and during especially showy wildflower seasons.

Objective 2: Consider access issues to NTMER under the Americans with Disabilities Act.

Task 1. Review the appropriate standards and requirements and take appropriate action.

## Environmental Impacts

The toilet facilities are provided in a parking lot and the Americans with Disabilities Act analysis is conceptual; therefore, these actions will have no significant negative environmental impacts. Plans developed subsequent to these analyses will be reviewed under CEQA.